

CLAIMS

1. A polishing pad used in chemical mechanical polishing and having a polishing region and a light-transmitting region, wherein the light transmittance of the light-transmitting region over the wavelength range of 400 to 700 nm is 50% or more.

2. The polishing pad according to claim 1, wherein the rate of change of the light transmittance of the light-transmitting region in wavelengths of 400 to 700 nm represented by the following equation is 50% or less:

the rate of change (%) = {(maximum transmittance in 400 to 700 nm - minimum transmittance in 400 to 700 nm)/maximum transmittance in 400 to 700 nm}×100

3. The polishing pad according to claim 1 or 2, wherein the light transmittance of the light-transmitting region at a wavelength of 400 nm is 50% or more, and the transmittance of the light-transmitting region over the wavelength range of 500 to 700 nm is 90% or more.

4. The polishing pad according to any one of claims 1 to 3, wherein the difference among the respective light transmittances of the light-transmitting region in 500 to 700 nm is 5% or less.

5. A polishing pad used in chemical mechanical polishing

and having a polishing region and a light-transmitting region, wherein the thickness of the light-transmitting region is 0.5 to 4 mm, and the light transmittance of the light-transmitting region over the wavelength range of 600 to 700 nm is 80% or more.

5

6. A polishing pad used in chemical mechanical polishing and having a polishing region and a light-transmitting region, wherein the light-transmitting region is arranged between the central portion and the peripheral portion of the polishing pad, and the length (D) in the diametrical direction is 3 times or more longer than the length (L) in the circumferential direction.

10

7. The polishing pad according to claim 6, wherein the shape of the light-transmitting region is rectangular.

15

8. The polishing pad according to claim 6 or 7, wherein the length (D) in the diametrical direction is $1/4$ to $1/2$ relative to the diameter of a material to be polished.

20

9. The polishing pad according to any one of claims 6 to 8, wherein the scatter of the thickness of the light-transmitting region is 100 μm or less.

25

10. The polishing pad according to any one of claims 1 to 9, wherein materials for forming the polishing region and the

light-transmitting region are polyurethane resin.

11. The polishing pad according to claim 10, wherein the polyurethane resin as the material for forming the polishing region and the polyurethane resin as the material for forming the light-transmitting region comprise the same kinds of organic isocyanate, polyol and chain extender.

12. The polishing pad according to any one of claims 1 to 11, wherein the material for forming the light-transmitting region is non-foam.

13. The polishing pad according to any one of claims 1 to 12, which does not have an uneven structure for retaining and renewing an abrasive liquid on the surface of the light-transmitting region in the polishing side.

14. The polishing pad according to any one of claims 1 to 13, wherein the material for forming the polishing region is fine-cell foam.

15. The polishing pad according to any one of claims 1 to 14, wherein the surface of the polishing region in the polishing side is provided with grooves.

16. The polishing pad according to claim 14 or 15, wherein the average cell diameter of the fine-cell foam is 70 μm or less.

5 **17. The polishing pad according to any one of claims 14 to 16, wherein the specific gravity of the fine-cell foam is 0.5 to 1.0 g/cm³.**

10 **18. The polishing pad according to any one of claims 14 to 17, wherein the hardness of the fine-cell foam is 45 to 65° in terms of Asker D hardness.**

15 **19. The polishing pad according to any one of claims 14 to 18, wherein the compressibility of the fine-cell foam is 0.5 to 5.0%.**

20 **20. The polishing pad according to any one of claims 14 to 19, wherein the compression recovery of the fine-cell foam is 50 to 100%.**

20 **21. The polishing pad according to any one of claims 14 to 20, wherein the storage elastic modulus of the fine-cell foam at 40°C at 1 Hz is 200 MPa or more.**

25 **22. A method of producing a semiconductor device, which**

comprises a step of polishing the surface of a semiconductor wafer with the polishing pad described in any one of claims 1 to 21.